

CLAIMS

What is claimed is:

1. A method for providing wireless communication, the method comprising the steps of:
 - 5 (a) receiving, at a first cell site, data for a subscriber, the data including a wired-network address;
 - (b) determining, based on the wired-network address, whether the subscriber is located in the cell site;
 - (c) if the subscriber is located in the cell site, retrieving a wireless-network
10 identifier of the subscriber; and
 - (d) transmitting the data, using the wireless-network identifier, via a wireless network to the subscriber.
2. The method of claim 1, wherein said determining step includes:
 - (i) retrieving a subscriber record; and
 - 15 (ii) matching the wired-network address to the subscriber in the subscriber record.
3. The method of claim 1, wherein the wireless-network identifier is an electronic serial number (ESN).
4. A method for providing wireless communication, the method comprising the
20 steps of:
 - (a) receiving, in a first cell site, data for a subscriber, the data including a wired-network address;
 - (b) determining, based on the wired-network address, whether the subscriber is located in a second cell site; and

- (c) if the subscriber is located in the second cell site, sending the data, via a tunnel, to a second cell site for wireless transmission to the subscriber.
5. The method of claim 4, wherein said determining step includes the steps of:
- 5 (i) retrieving a subscriber record; and
- (ii) matching the wired-network address to the subscriber in the subscriber record.
6. The method of claim 4, further comprising the step of:
- (d) receiving from the second cell, via a backhaul network, handoff information for the subscriber.
- 10 7. The method of claim 4, further comprising the step of:
- (d) creating a tunnel over the backhaul network from the first cell site to the second cell site.
8. A method for providing wireless communication, the method comprising the steps of:
- 15 (a) receiving, via a tunnel from a first cell, data for a subscriber, the data including a dynamically-assigned wired-network address relating to a subscriber;
- (b) determining the subscriber to whom the address is assigned; and
- (c) transmitting the data via the wireless network to the subscriber.
- 20 9. The method of claim 8, wherein said determining includes the steps of:
- (i) storing the subscriber's wireless-network identifier in a database; and
- (ii) retrieving the subscriber's wireless-network identifier from the database based on the received wired-network address.

10. The method of claim 8, further comprising the steps of:
- (d) receiving a request for a wired-network address server to renew a wired-network address lease;
 - (e) determining whether the subscriber has been handed off, if the subscriber has been handed off, denying the received request; and
 - (f) dynamically assigning a new wired-network address to the subscriber.
11. The method of claim 9, wherein the subscriber's wired-network address is received from the first cell.
12. The method of claim 9, wherein the subscriber's wired-network address is received from the subscriber.
13. An apparatus for providing wireless communication, the apparatus comprising:
- (a) a processor; and
 - (b) a memory coupled to said processor, said memory including a database that associates a subscriber's wired-network address with a subscriber's wireless network identifier, and said memory storing instructions adapted to be executed on said processor, said instructions comprising:
 - (i) receiving, at a first cell site, data for a subscriber, the data including a wired-network address;
 - (ii) determining, based on the wired-network address, whether the subscriber is located in the cell site;
 - (iii) if the subscriber is located in the cell site, retrieving a wireless-network identifier of the subscriber; and
 - (iv) transmitting the data, using the wireless-network identifier, via a wireless network to the subscriber.

14. The apparatus of claim 13, wherein said memory includes further instructions adapted to be executed on said processor, said further instructions comprising:
- (i) retrieving a subscriber record; and
 - (ii) matching the wired-network address to the subscriber in the subscriber record.
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15. The apparatus of claim 13, wherein the wireless-network identifier is an electronic serial number (ESN).
16. An apparatus for providing wireless communication, the apparatus comprising:
- (a) a processor; and
 - (b) a memory coupled to said processor, said memory including a database that associates a subscriber's wired-network address with a subscriber's wireless-network identifier, and said memory storing instructions adapted to be executed on said processor, said instructions comprising:
 - (i) receiving, in a first cell site, data for a subscriber, the data including a wired-network address;
 - (ii) determining, based on the wired-network address, whether the subscriber is located in a second cell site; and
 - (iii) if the subscriber is located in the second cell site, sending the data, via a tunnel, to a second cell site for wireless transmission to the subscriber.
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17. The apparatus of claim 16, said memory storing further instructions adapted to be executed by said processor, said further instructions comprising:
- (iv) retrieving a subscriber record; and
 - (v) matching the wired-network address to the subscriber in the subscriber record.
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18. The apparatus of claim 16, said memory storing further instructions adapted to be executed by said processor, said further instructions comprising:
- (iv) receiving from the second cell, via a backhaul network, handoff information for the subscriber.
- 5 19. The apparatus of claim 18, said memory storing further instructions adapted to be executed by said processor, said further instructions comprising:
- (v) creating a tunnel over the backhaul network from the first cell site to the second cell site.
20. An apparatus for providing wireless communication, the apparatus comprising:
- 10 (a) a processor; and
- (b) a memory coupled to said processor, said memory including a database that associates a subscriber's wired-network address with a subscriber's wireless network identifier, and said memory storing instructions adapted to be executed on said processor, said instructions comprising:
- 15 (i) receiving, via a backhaul network from a first cell, data for a subscriber, the data including a dynamically-assigned wired-network address relating to a subscriber;
- (ii) determining the subscriber to whom the address is assigned; and
- (iii) transmitting the data via the wireless network to the subscriber.
- 20 21. The apparatus of claim 20, said memory and further instructions adapted to be executed on said processor, the instructions including:
- (iv) storing the subscriber's wireless-network identifier in a database; and
 - (v) retrieving the subscriber's wireless-network identifier from the
- 25 database based on the received wired-network address.

22. The apparatus of claim 21, wherein the subscriber's wired-network address is received from the subscriber.
23. The apparatus of claim 20, wherein the subscriber's wired-network address is received from the first cell.
- 5 24. The apparatus of claim 20, said memory and further instructions adapted to be executed on said processor, the instructions including:
- (iv) receiving a request for a wired-network address server to renew a wired-network address lease;
 - (v) determining whether the subscriber has been handed off,
 - 10 (vi) if the subscriber has been handed off, denying the received request; and
 - (vii) dynamically assigning a new wired-network address to the subscriber.
- 15 25. A method for assigning a wired-network address to a subscriber, the method comprising the following steps:
- (a) receiving a request for a wired-network address;
 - (b) identifying an originating cell site;
 - (c) identifying an unoccupied address associated with the originating cell site; and
 - 20 (d) assigning the unoccupied address to the subscriber.
26. The method of claim 25 further comprising:
- (e) storing a wireless-network identifier associated with the unoccupied address; and
 - (f) marking the subscriber as being located in the originating cell site.

27. The method of claim 26, further comprising the following steps:
- (g) receiving a request to renegotiate a wired-network address lease for a subscriber, the subscriber having a wired-network address assigned in an originating cell site;
 - 5 (h) determining whether the subscriber is located in the originating cell site;
 - (i) if the subscriber is not in the originating cell site, denying the request; and
 - (j) signing the subscriber a new wired-network-address lease based on the subscriber's current location.
- 10 28. An apparatus for assigning a wired-network address to the subscriber, the apparatus comprising:
- (a) a processor;
 - (b) a memory coupled to said processor, said memory storing instructions adapted to be executed on said processor, the instructions including:
 - 15 (i) receiving a request for a wired-network address;
 - (ii) identifying an originating cell site;
 - (iii) identifying an unoccupied address associated with the originating cell site; and
 - (iv) assigning the unoccupied address to the subscriber.
- 20 29. The apparatus of claim 28, said memory storing further instructions adapted to be executed on said processor, the instructions including:
- (v) storing a wireless network identifier associated with the unoccupied address; and
 - (v) marking the subscriber as located in the originating cell site.

30. A method for assigning a wired-network address, the method comprising the following steps:
- 5 (a) receiving a request to renegotiate a wired-network address lease for a subscriber, the subscriber having a wired-network address assigned in a first cell site;
- (b) determining the present location of the subscriber; and
- (c) if the subscriber is in a second cell site, denying the request.
31. The method of claim 30, further comprising the steps of:
- 10 (d) assigning the subscriber a new wired-network-address lease based on the subscriber's current location.
32. An apparatus for assigning a wired-network address, the apparatus comprising:
- (a) a processor;
- (b) a memory coupled to said processor, said memory storing instructions adapted to be executed by said processor, the instructions comprising:
- 15 (i) receiving a request to renegotiate a wired-network-address lease for a subscriber, the subscriber having a wired-network address assigned in a first cell site;
- (ii) determining the present location of the subscriber; and
- (iii) if the subscriber is in a second cell site, denying the request.
- 20 33. The apparatus of claim 32, wherein said memory stores further instructions adapted to be executed by said processor, the instructions including:
- (iv) assigning the subscriber a new wired-network-address lease based on the subscriber's current location
34. A wireless network comprising:
- 25 (a) a server containing a pool of wired-network addresses;

- (b) a plurality of base stations, each base station containing a database that associates subscriber wired-network addresses with subscriber wireless-network identifiers, and each base station being associated with a subset of the pool of wired-network addresses; and
 - 5 (c) a backhaul network connecting each of the plurality of base stations with one another.
- 35. The wireless network of claim 34, wherein the wired-network addresses are Internet Protocol (IP) addresses.
- 36. The wireless network of claim 34, wherein the wireless-network identifiers are
10 electronic serial numbers.
- 37. The wireless network of claim 35, wherein the wireless-network identifiers are electronic serial numbers.